U.S. Embassy—Mexico City
Electricity Factsheet

Important Facts:

- The state-owned Federal Electricity Commission (CFE) is the dominant player in the generation sector, controlling over three-fourths of installed generating capacity. CFE also currently holds a monopoly on electricity transmission and distribution.
- The Energy Regulatory Commission (CRE) has principal regulatory oversight of the electricity sector.
- In December 2013, the Mexican Congress passed an energy reform that will allow the private sector to participate in the electricity generation.
- Formerly, private sector participation in electricity generation was permitted only in certain categories, including for the purposes of construction and operation of private plants for self-supply, cogeneration, Independent Power Producer (IPP), small production (under 30 MW), and import/ export.

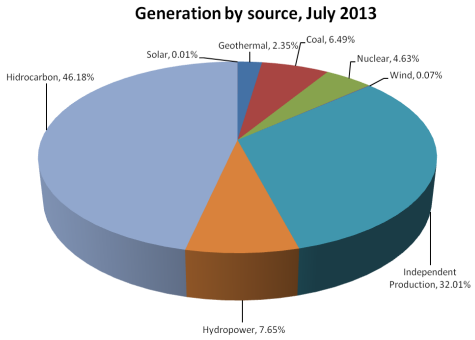
Most of Mexico's electricity generation comes from conventional thermal plants, the fuel source for which is increasingly natural gas

Mexico's state-owned public utility, the Federal Commission of Electricity (CFE), runs the electricity industry in Mexico. CFE is responsible for the overall planning, development, and operation of the national electricity system in Mexico.

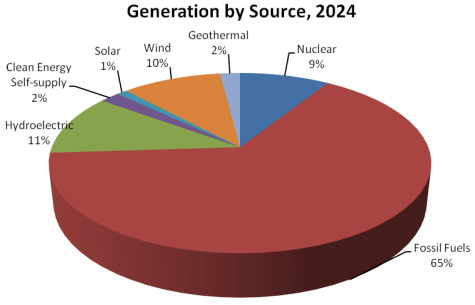
The recently approved energy reform retains state-ownership of the Federal Electricity Commission (CFE) and its transmission and distribution networks, but allows CFE to enter into contracts with the private sector. The energy reform is expected to impact the sector in several ways, including allowing for greater efficiency in the planning and development of power generation projects, introducing competitiveness into the electricity market, providing non-discriminatory transmission network access and use, and increasing new investment projects, particularly clean energy projects.

The national installed capacity in Mexico is 62 gigawatts (GW), 53 GW of which corresponds to public service, including 12 GW of independent power producers (IPPs), while private sector licensees represent another 9 GW. Mexico's installed electrical power capacity on the National Electricity System (SEN) grid increased by 620 megawatts (MW) during the first six months of 2013. In 2012, the national electricity consumption was 229,318 gigawatt-hours (GWh). This represented a 7.2% increase from 2010. Electricity power supply grew 2.9% and extended coverage to more than 35.3 million users. According to Mexico's Secretariat of Energy (SENER), by July, 2013, non-fossil energy sources contributed with 24.2% of the installed public service capacity, while fossil fuel sources contributed with 75.8%.

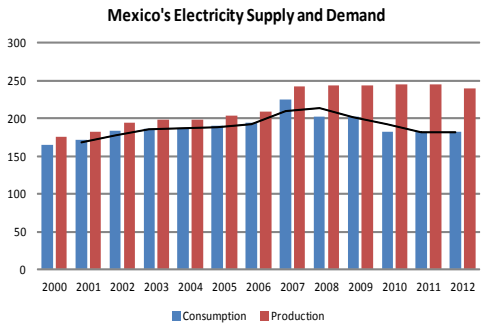
In 2010, installed capacity for power generation in OECD member countries totaled 2.6 Terawatts (TW). North America concentrated 46.8% of this capacity. The United States reported an installed capacity of 1.0 TW, which represented 83.9% of the total in North America and 39.3% among all OECD countries. Canada's and Mexico's share of North America's capacity was 11.1% and 5%, respectively.



Source: EIA.



Source: SENER

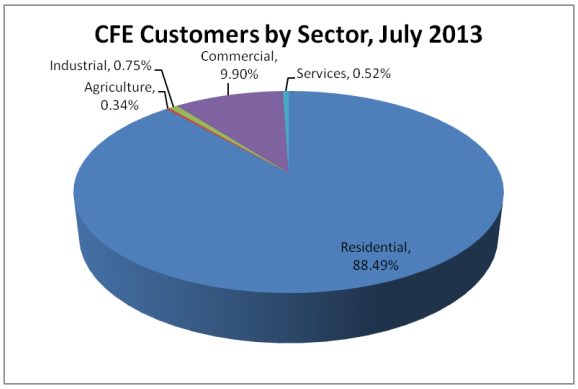


Source: EIA.

The electricity sector in Mexico relies heavily on thermal sources (68.9% of total installed capacity), followed by hydropower generation (11% of total installed capacity). Although exploitation of solar, wind, and biomass resources has great potential, geothermal energy is the only renewable source (excluding hydropower) with a significant contribution to the energy mix (2% of total installed capacity). The National Energy Strategy, a document issued by SENER, and the Works and Investment Program of the Electricity Sector (POISE), a planning document from CFE, outline Mexico's goal to increase clean energy generating capacity (renewable energy and nuclear) to 35% in 2024.

Industry vs Residential

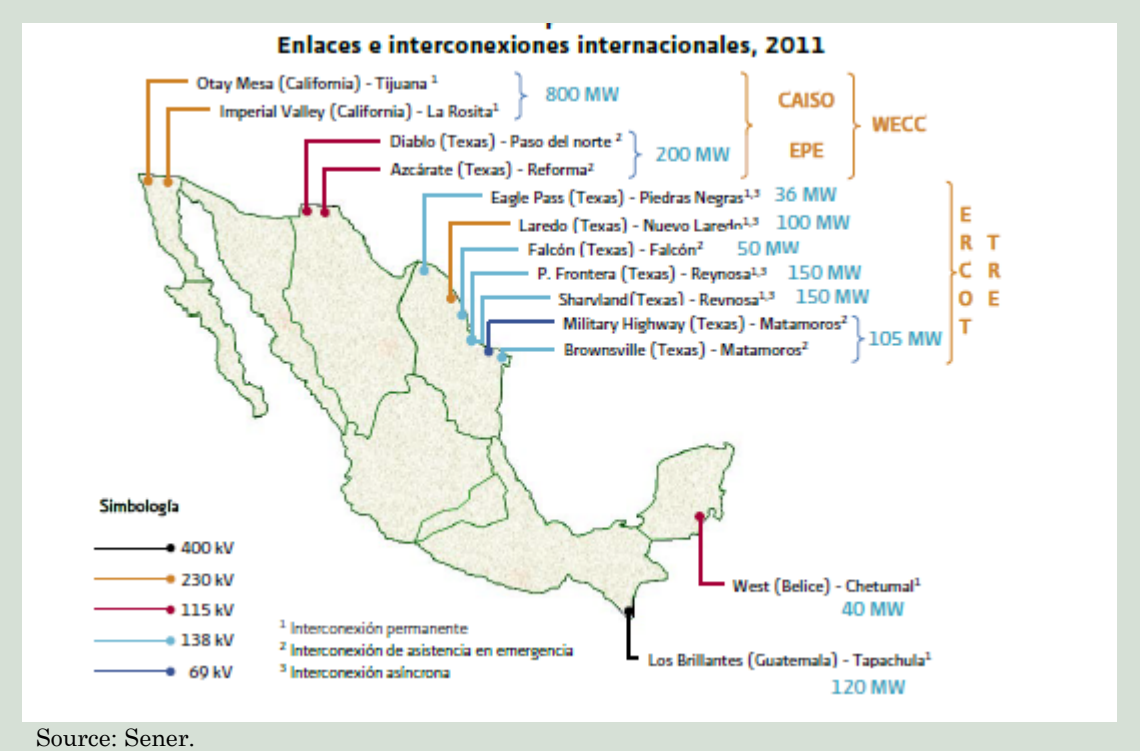
Mexico's national transmission grid, which is operated by CFE, includes over 31,000 miles of mostly high and medium voltage lines. According to CFE statistics, over 97% of Mexico's population has access to electricity. About 99.5% of the electricity generated by the CFE is for domestic consumption, and the remaining 0.5% is exported. As of July, 2013, 88.5% of domestic consumption was in the residential sector. In contrast, domestic consumption in other emerging markets, such as Brazil, Russia, and India was between 47% and 50% of total electricity generated in 2011. Average industrial sector consumption in OECD countries was about 33%.



Source: SIE

International Interconnections

Electricity trade between the United States and Mexico has existed since 1905, when privately owned utilities located in remote towns on both sides of the border helped meet one another's electricity demand with a few cross-border low voltage lines. Over the years, both countries developed highly regulated and structured electricity sectors and a number of major and minor cross-border transmission lines were constructed. However, for a variety of technical and market reasons, U.S.-Mexico electricity trade has remained small. Existing electrical interconnections between Mexico and the United States are relatively limited in capacity and operationally constrained by non-synchronous cross-border ties, except in the Southern California-Baja California region.



Source: Sener.

The National Electricity System (SEN) is interconnected at different levels of tension with the United States, Belize, and Guatemala. There are two types of interfaces: the ones that operate on a permanent basis and those for emergency situations. In the case of Guatemala, the infrastructure consists of a 27 kilometer transmission line on the Mexican side. Mexico has eleven interconnections on its northern border (see map above). The northern border electricity trade is managed by the SEN and two regional U.S. councils: the Western Electricity Coordinating Council (WECC) and North American Electric Reliability Corporation (NERC). The SEN also has interconnections with the Electric Reliability Council of Texas (ERCOT).